



THE CARBON NANOTUBE SPECIALIST

NANO-ENGINEER YOUR FUTURE

PLASTICYL

Ref: PLASTICYL™ PP2001 – 5 November 2009 – V07

PLASTICYL™ PP2001 / Product Data Sheet

General Information

Description

PLASTICYL™ is a family of Multi-Wall Carbon Nanotube (MWNT) thermoplastic concentrates for applications requiring superior electrical conductivity and electrostatic discharge (ESD) properties. PLASTICYL™ PP2001 is a conductive masterbatch based on polypropylene. Because of its low viscosity and high flow formulation, PLASTICYL™ PP2001 is ideal for standard injection molding and extrusion processes.

Applications

- ESD (Electrostatic Discharge) and electrically conductive parts
- E&E, automotive, industrial
- Injection molding, extrusion

Benefits

- Electrical conductivity at low loading
- Retention of key mechanical properties
- Easier processing

Main Characteristics

CARBON NANOTUBES LOADING (%WT)	REAL DENSITY (G/L) ISO 1183	MELT FLOW INDEX (G/10 MIN)	MELTING POINT (°C) ISO 11357-1,-3
20 ± 1,0	872	Not measurable	165

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Typical Performance after Injection Molding

PROPERTIES	STANDARD	UNITS	NEAT POLY- PROPYLENE	AFTER DILUTION TO:			
				1 % _{WT} OF CNT	2 % _{WT} OF CNT	3,2 % _{WT} OF CNT	5 % _{WT} OF CNT
<i>Volume resistivity</i>	CTM E043	Ohm.cm	1,10 ¹³	3,10 ⁹	4,10 ⁶	2,10 ²	1,10 ¹
<i>Surface resistivity</i>	CTM E042	Ohm.sq	1,10 ¹⁵	1,10 ¹¹	6,10 ¹⁰	1,10 ⁸	4,10 ⁴
<i>Young's Modulus</i>	ISO 527-1,2	MPa	1280	1625	1728	1795	1954
<i>Tensile strength at break</i>	ISO 527-1,2	MPa	28,2	33,2	35,5	36,8	38,2
<i>Strain at break</i>	ISO 527-1,2	%	520	436	154	64	16
<i>Charpy notched impact strength</i>	ISO 180	kJ/m ²	2,4	3,0	3,2	3,0	2,4
<i>Melt flow index</i>	ISO 1133:1997	g/10 min	12,0	9,8	5,6	3,2	1,1
<i>Melting point</i>	ISO 11357-1,-3	°C	-	-	-	-	-
<i>Burning behavior</i>	UL 94	Class	-	-	-	-	-

N.B.: Compounds were processed using an L/D ratio and a 48 twin-screw extruder under proprietary conditions.

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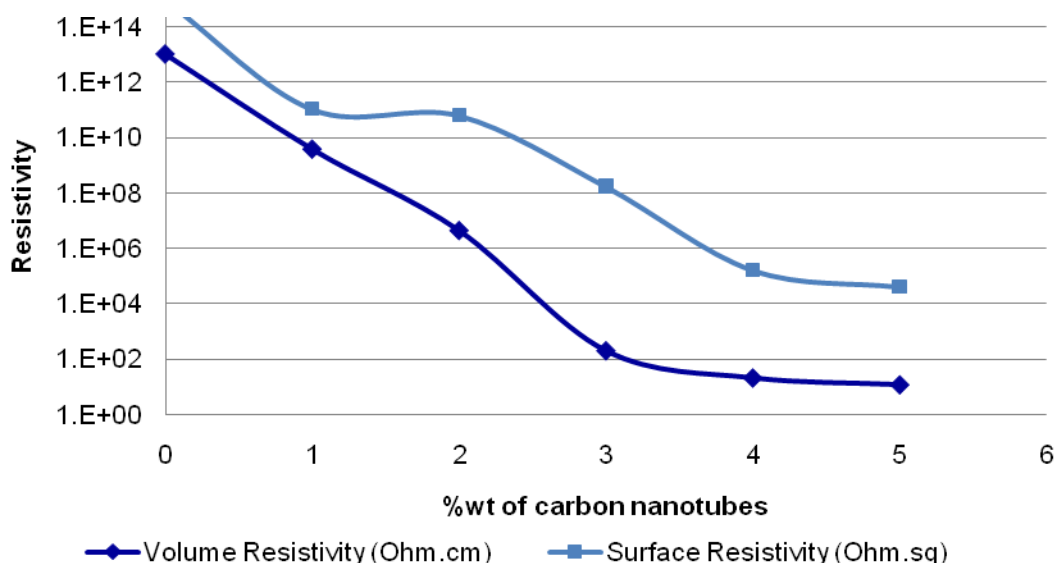
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Percolation Curves for Volume and Surface Resistivity



N.B.: Electrical resistivity measurement in accordance to CTM E043 and CTM E402 (Cabot Testing Method), on standard injection molded IZOD specimens.

Disclaimer

This information is intended to be used only as a guideline for designers and users of modified thermoplastics. All information is believed to be accurate but is given without acceptance of liability. Users should make their own assessment of the suitability of the product for the purposes required. Properties may be materially affected by extrusion and molding parameters as well as by the shape and size of the part. No information supplied by Nanocyl constitutes a warranty regarding the product performance.

For technical assistance, sales or further information, please contact us :

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